EASY FOLDING DEVICE FOR TREADMILLS

FIELD OF THE INVENTION

The present invention relates to an easy folding device for treadmills and a spring assists the folding action and the unfolding action.

BACKGROUND OF THE INVENTION

A conventional treadmill generally includes a frame having two sides and a running belt is reeved onto two ends of the frame and a motor drives the running belt. The frame is connected to a base which has two posts respectively extending therefrom. A control panel and a handle are connected between the two posts. The user is running on the running belt and the data of speed, calorie consuming and the rate of slope can be displayed on the control panel. In order to save the space of storage, most of the treadmills can be folded upright by pivoting the frame. Nevertheless, the treadmill is so heavy that the user cannot fold or unfold the treadmill easily. Especially when the frame is folded at a large angle, the user has to support the frame and this is not an easy job for the users.

The present invention intends to provide an easy folding device that assists the user to fold or unfold the frame without too much difficulties.

SUMMARY OF THE INVENTION

In accordance with one aspect of the present invention, there is provided a treadmill which comprises a base having two side rails and each side rail has a passage defined therethrough. A frame has two sides and a running belt reeves around two ends of the frame.

Two collars are respectively movably received in the two passages and two first spiral ramps are located on different surfaces on one side of each collar. Two pins movably respectively extend through the two collars and are fixed to the two sides of the frame. Two springs are mounted to the two pins and biased between the two side rails of the base and the two sides of the frame. Each pin has a head with two second spiral ramps located on different surfaces and the first spiral ramps are movably engaged with the second spiral ramps.

The present invention will become more obvious from the following description when taken in connection with the accompanying drawings which show, for purposes of illustration only, a preferred embodiment in accordance with the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view to show the treadmill of the present invention;

Fig. 2 is an exploded view to show the easy folding device of the treadmill of the present invention;

Fig. 3 shows the frame are located in horizontal direction and the collar is located away from the head of the pin, and

Fig. 4 shows the frame is folded upright and the collar is matched with the head of the pin.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to Figs. 1 to 3, the treadmill 10 of the present invention comprises a base having two side rails 11 and each side rail 11 has a passage 111 defined therethrough. Each of the passages 111 has three grooves 112 defined in an

inner periphery thereof. Two posts 12 extend from the two side rails 11 of the base and a control panel 13 and two handles 14 are respectively connected to the two posts 12.

A frame 20 has two sides and a running belt reeves around two ends of the frame 20. An end of the frame 20 is located between the two side rails 11 of the base.

The easily folding device includes two collars 30 which are respectively movably received in the two passages 111 in the two side rails 11 and each collar 30 has three ridges 33 which are movably engaged with the grooves 112. Two first spiral ramps 32 are located on different surfaces on one side of each collar 30. Each first spiral ramp 32 includes a high portion and a low portion which extends from the high portion.

Two pins 40 movably respectively extend through the two respective central holes 31 of the two collars 30 and are fixed to the two sides of the frame 20 by inserting a flat end 41 of each pin 40 into an elongate hole 21 in each of the sides of the frame 20. A screw 70 extends through the two sides of the frame 20 and threadedly engaged with an end of the flat end 41 of each screw 70. A cover 60 is fixedly connected to each of the side rails 11 of the base by extending screws 81 through holes 61 in four corners of the cover 60 and threadedly engaged with threaded holes 113 in the side rails 11. Two springs 50 are mounted to the two pins 40 and biased between the two side rails 11 of the base and the two sides of the frame 20. Each pin 40 has a head 42 with two second spiral ramps 421 located on the same side and different surfaces. Each second spiral ramp 421 includes a high

portion and a low portion which extends from the high portion. The first spiral ramps 32 can be movably engaged with the second spiral ramps 421.

When the frame 20 is put in horizontal direction as shown in Fig. 3 and the user may run on the running belt, the high portions of the first ramps 32 contacts the high portions of the second ramps 421, and the springs 50 are compressed.

Further referring to Fig. 4, when pivoting the frame 20 to the upright position, the pins 40 are pivoted with the frame 20 and the second ramps 421 are moved along the first ramps 32 till the low portions of the first ramps 32 contacts the low portions of the second ramps 421, and the compression force to the springs 50 is released. It is noticed that during the rotation of the frame 20, the springs 50 and the engagement of the first spiral ramps 32 and the second spiral ramps 421 provide a damping force to assist the user to pivot the frame 20.

While we have shown and described the embodiment in accordance with the present invention, it should be clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.